

Figure 1 Conventional Noise Feedback Coding

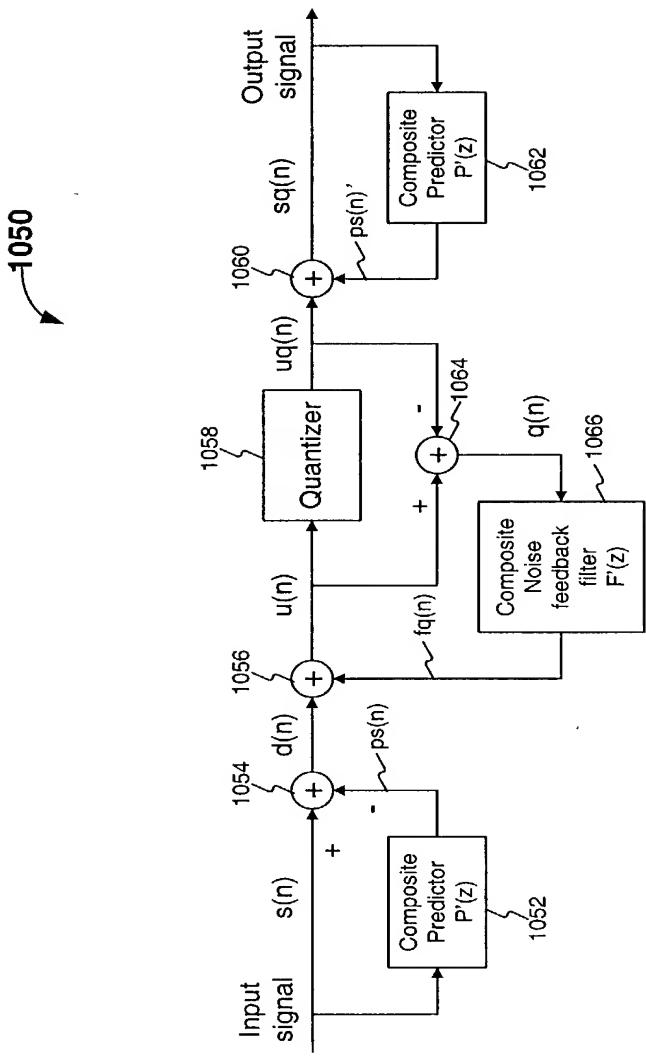


Figure 1A Noise Feedback Coding Using Composite Short-Term and Long-Term Predictors and Composite Short-Term and Long-Term Filter

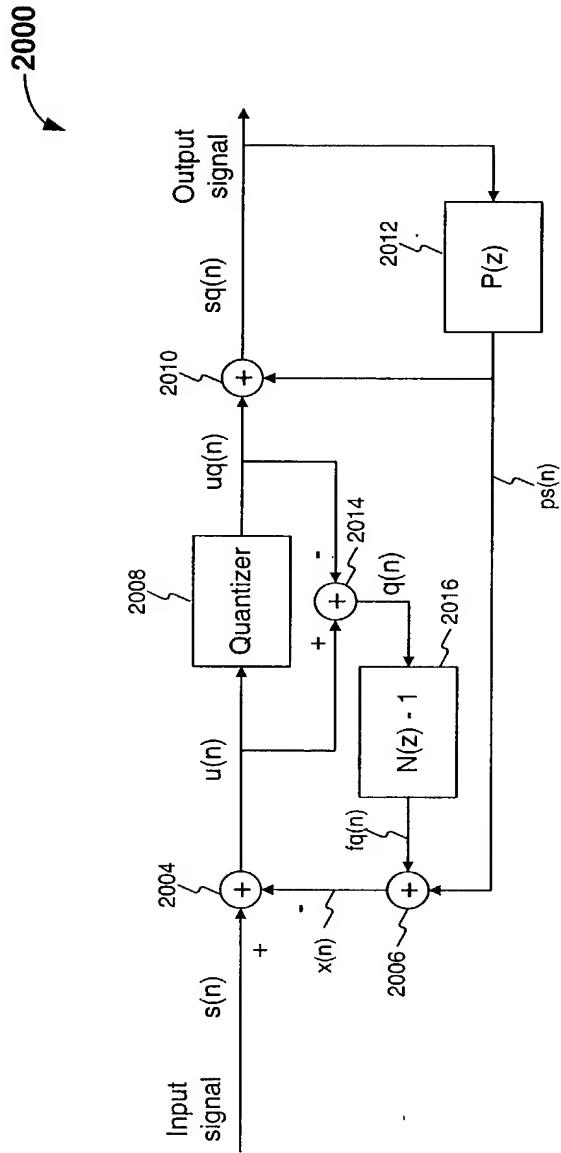


Figure 2 An alternative form of conventional Noise Feedback Coding

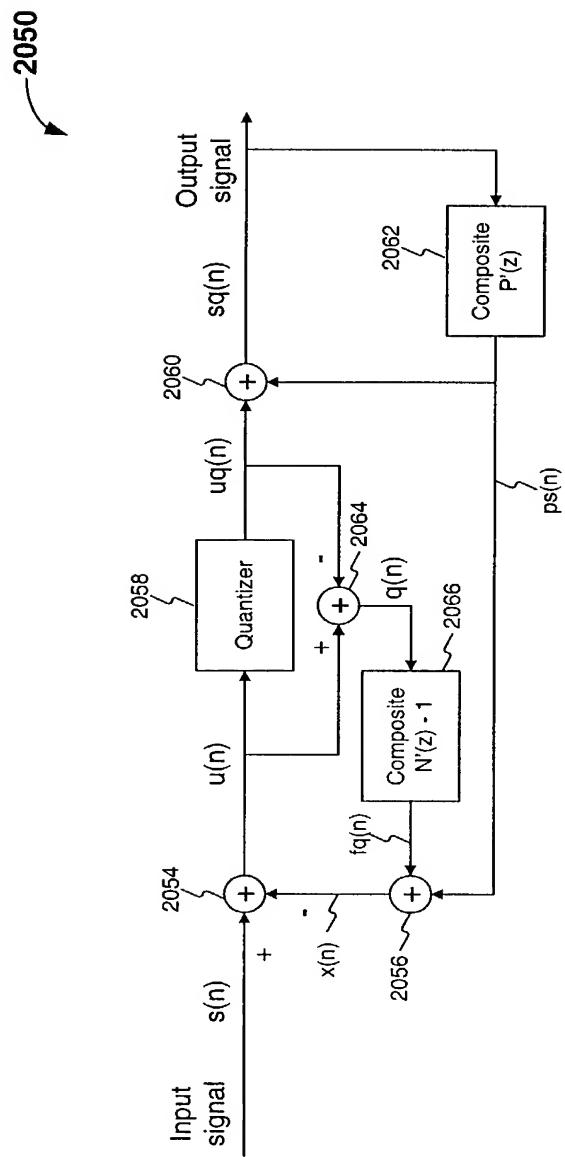


Figure 2A Noise Feedback Coding Using Composite Predictor and
Composite Noise Filter

0202-04.vsd/4

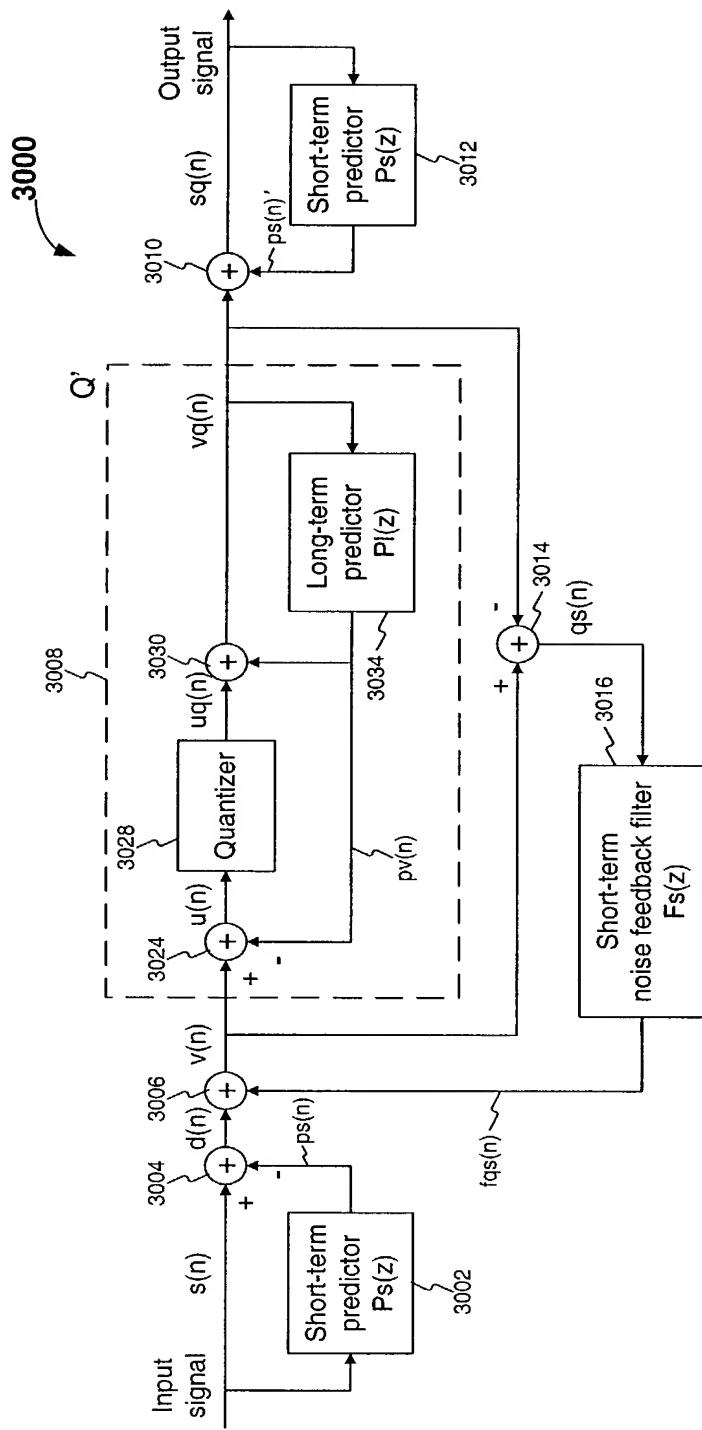


Figure 3 Noise Feedback Coding with short-term and long-term prediction but only short-term noise spectral shaping

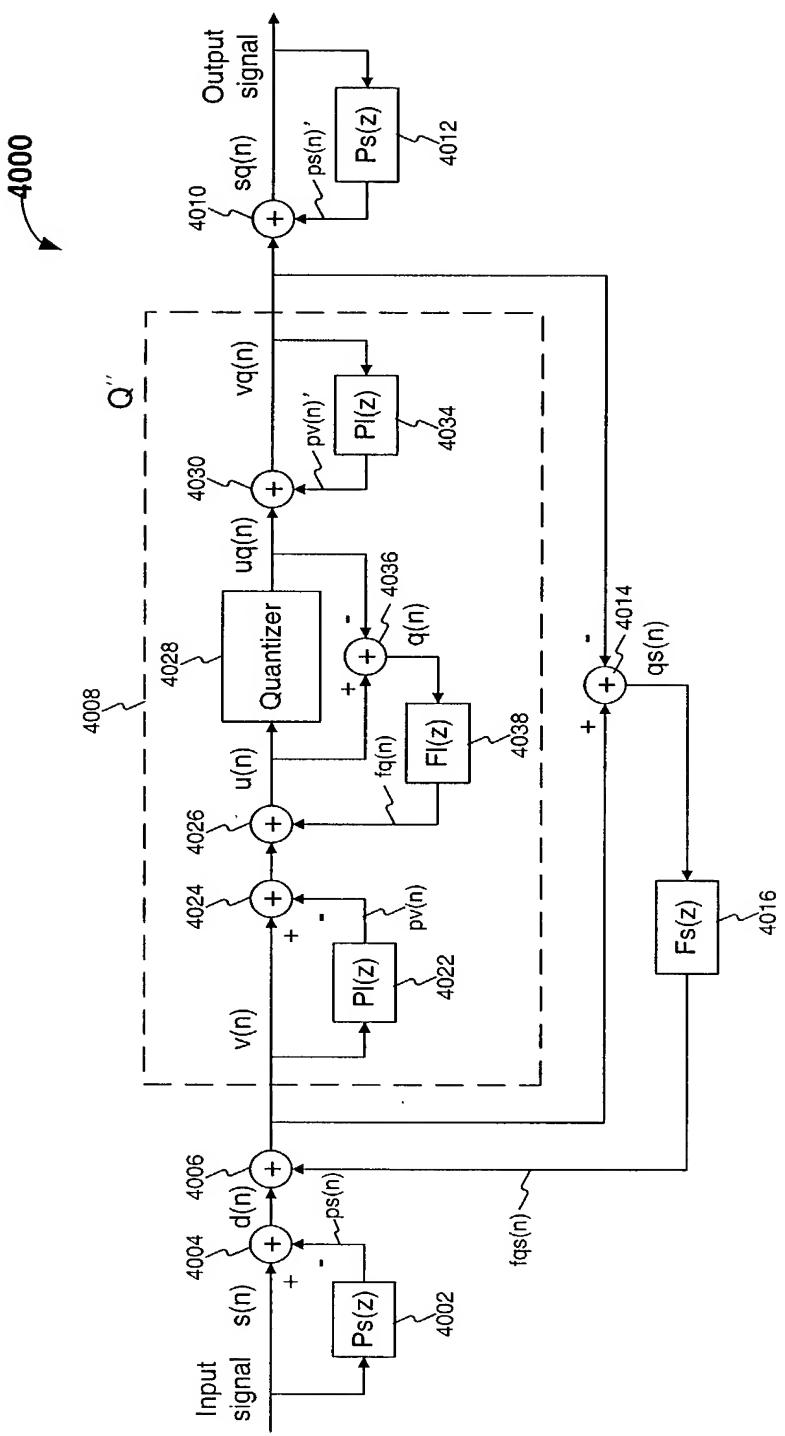


Figure 4 Nested two-stage Noise Feedback Coding structure with short-term and long-term prediction and short-term and long-term noise spectral shaping

0202-04 vsd/6

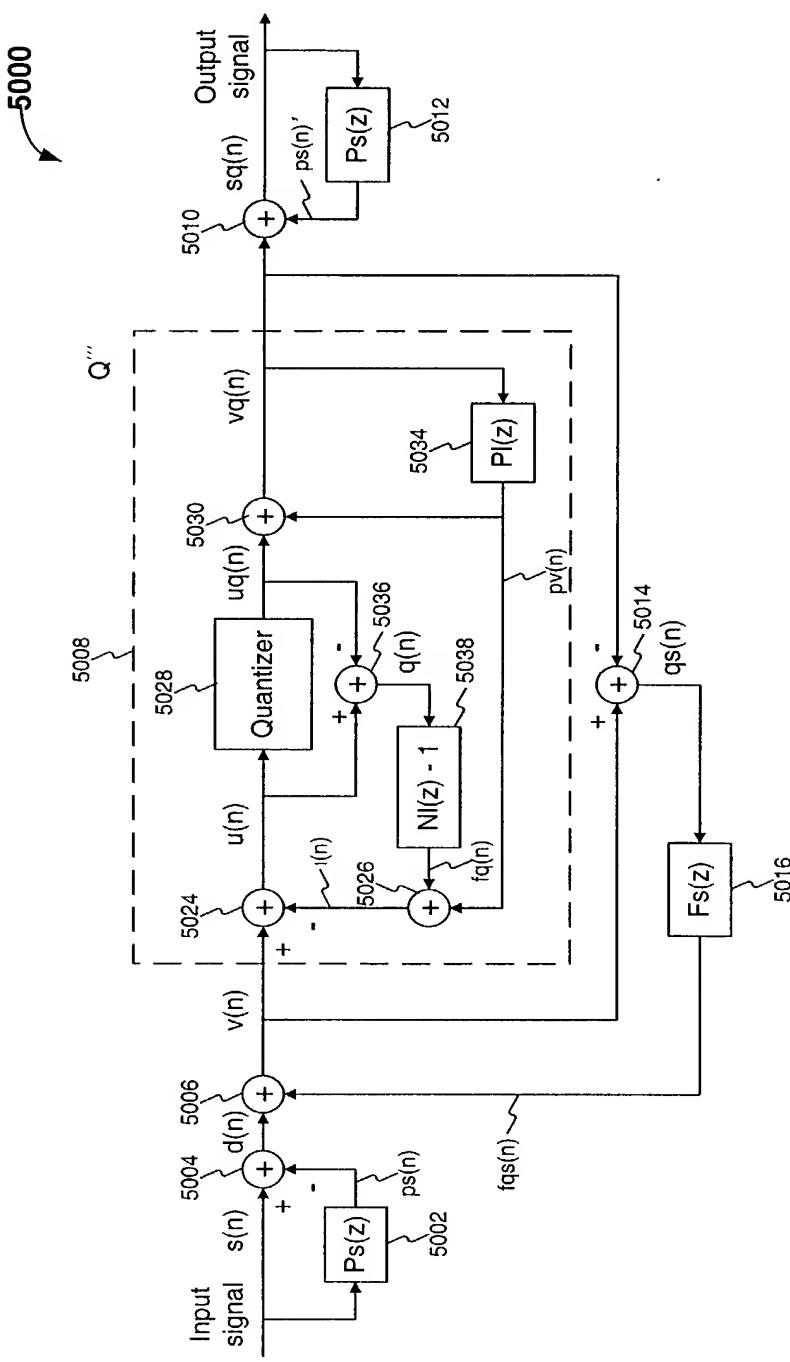
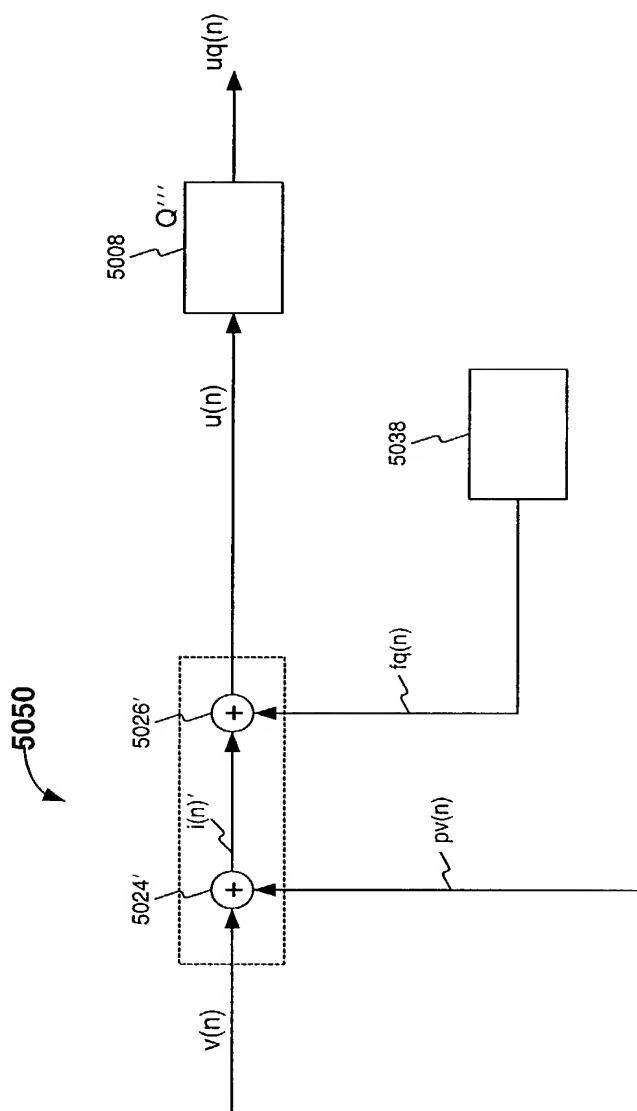


Figure 5 An alternative nested two-stage Noise Feedback Coding structure with short-term and long-term prediction and short-term and long-term noise spectral shaping

FIG. 5A

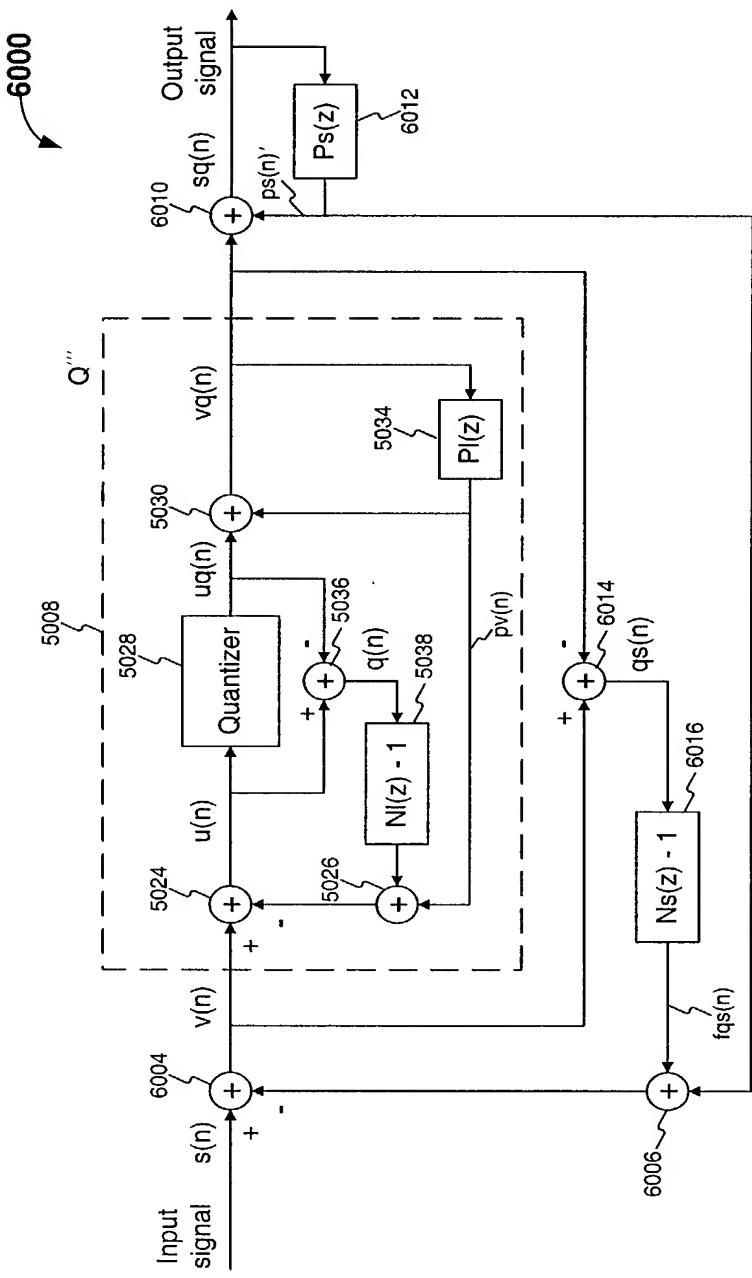


Figure 6 Another alternative nested two-stage Noise Feedback Coding structure with short-term and long-term prediction and short-term and long-term noise spectral shaping

0202-04 vsd/9

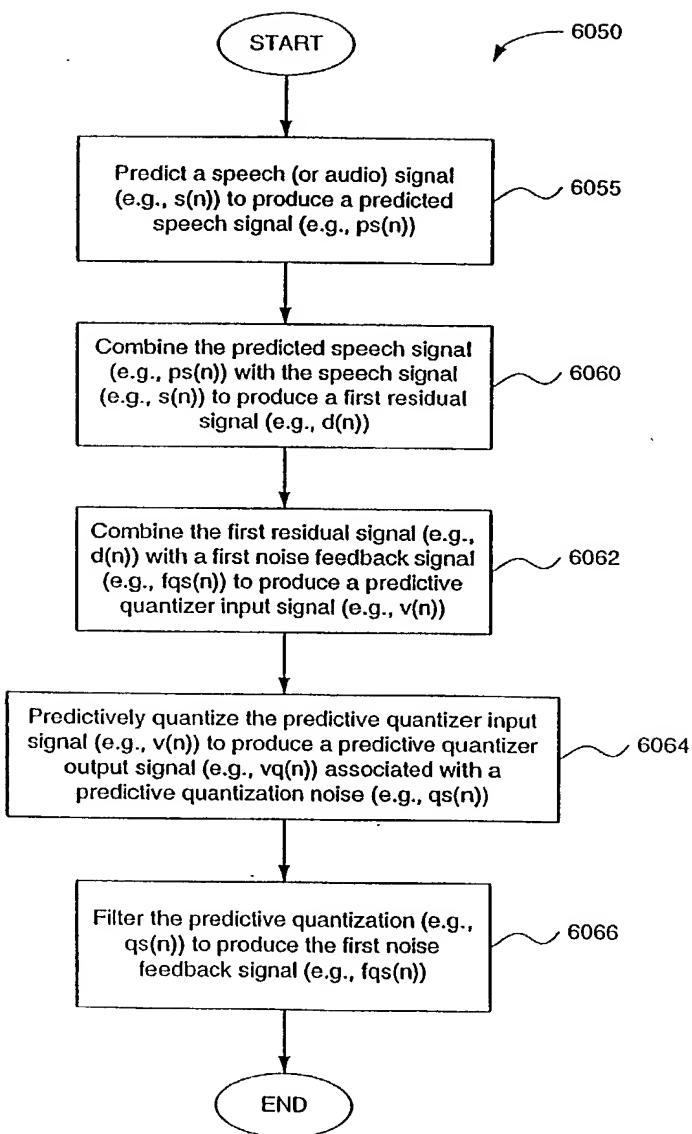


FIG. 6A

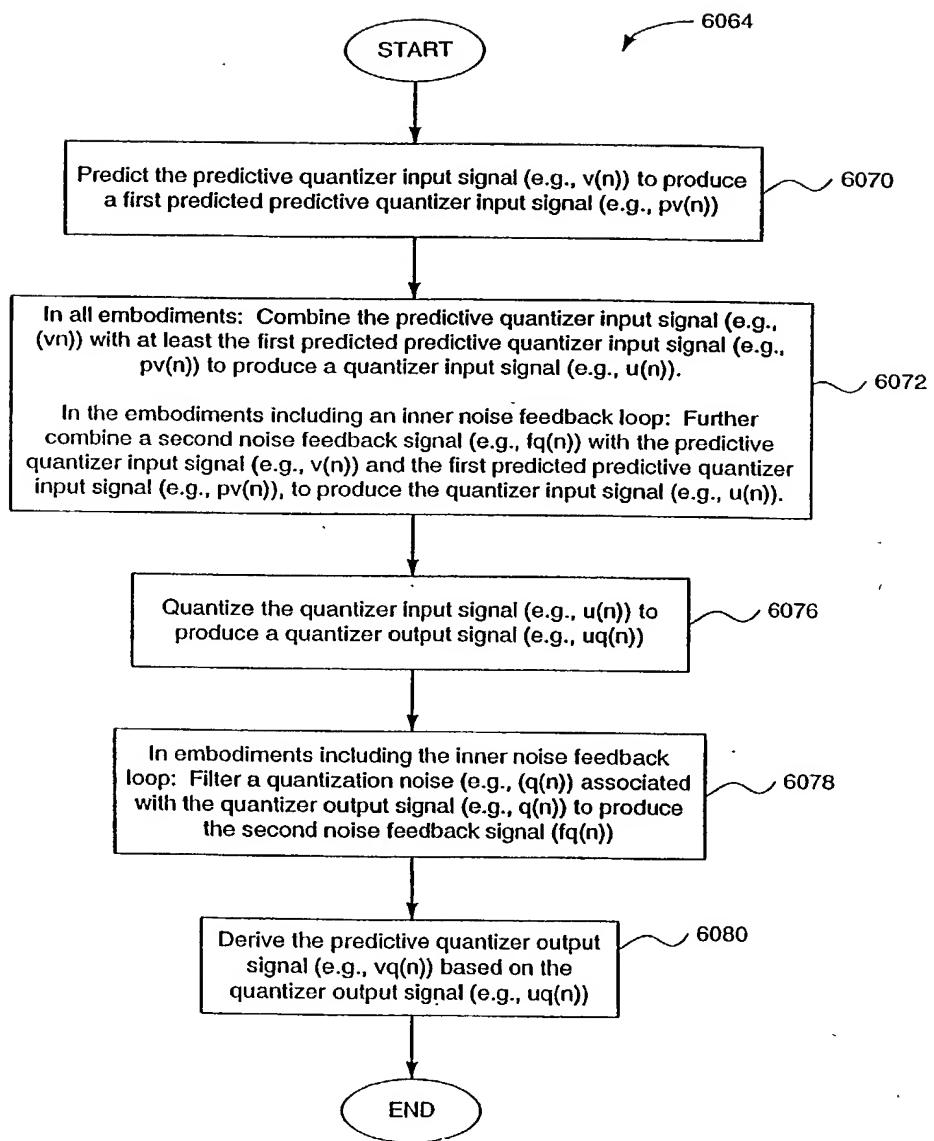


FIG. 6B

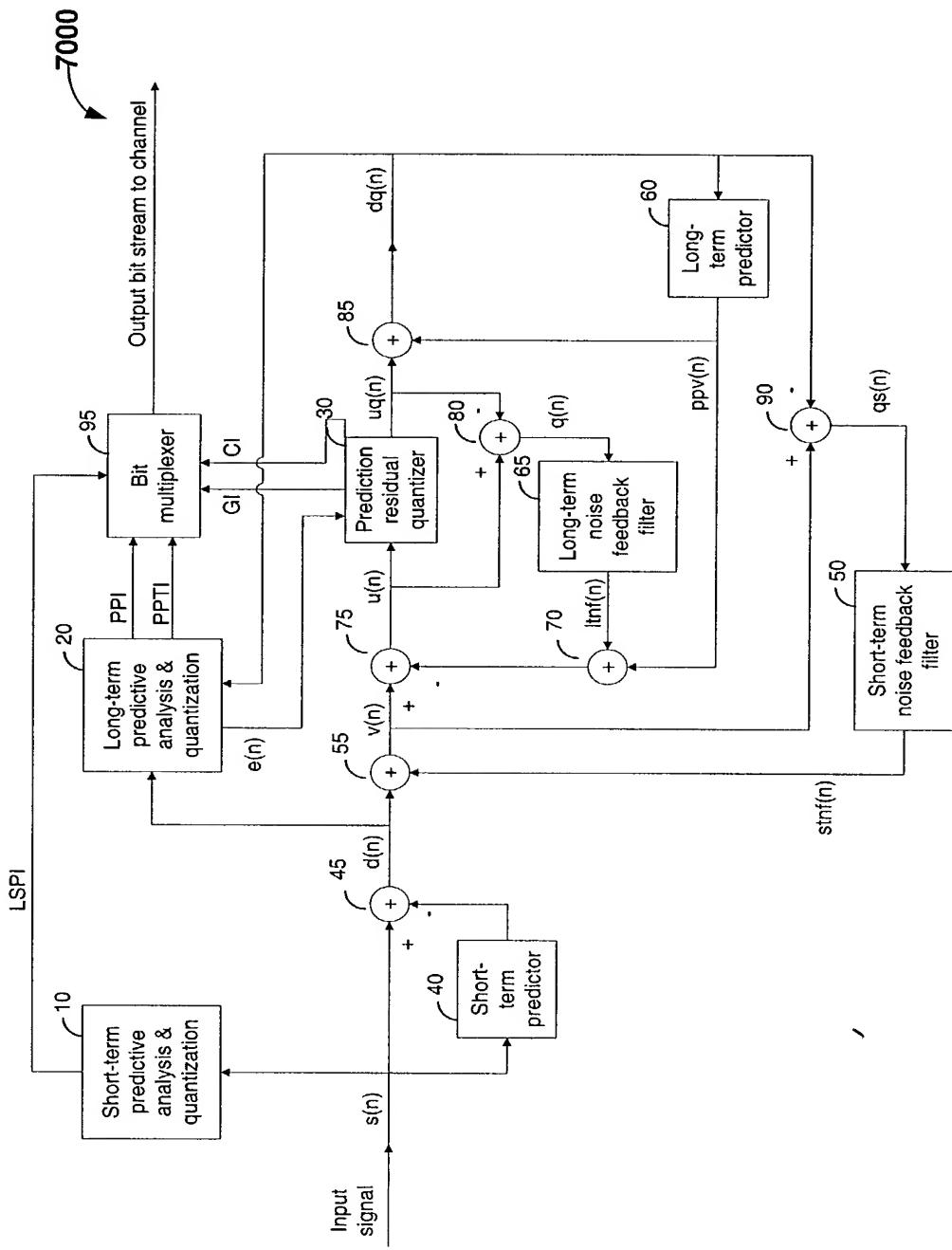


Figure 7 Encoder of a nested two-stage noise feedback codec (TSNFC)

020204.vsd/10

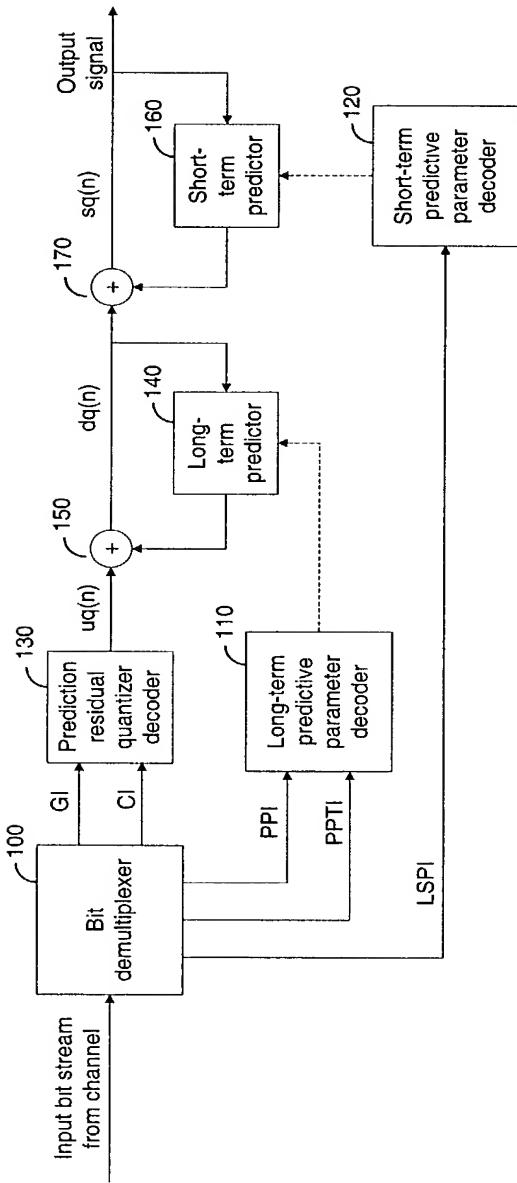


Figure 8 Decoder corresponding to the TSNFC encoder in Fig. 7

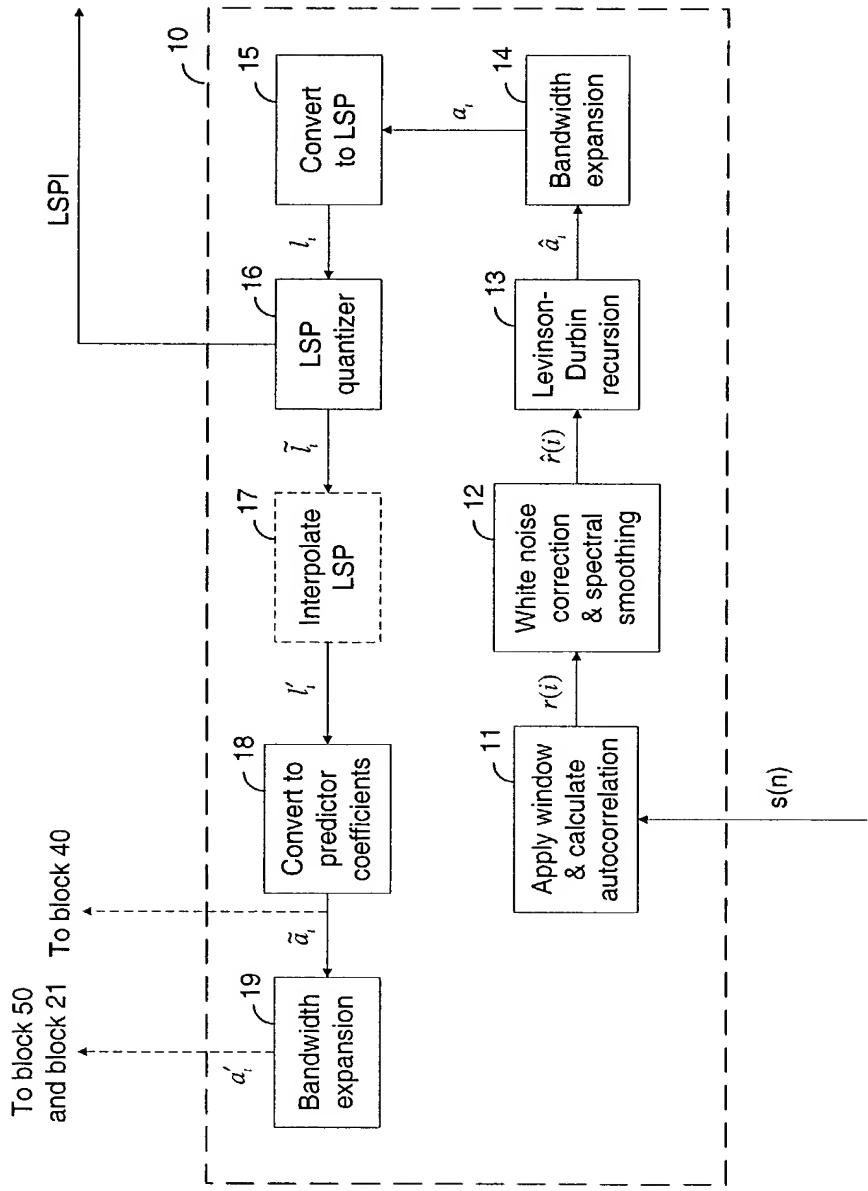


Figure 9 Short-term predictive analysis and quantization (block 10)

0202-04.vsd/12

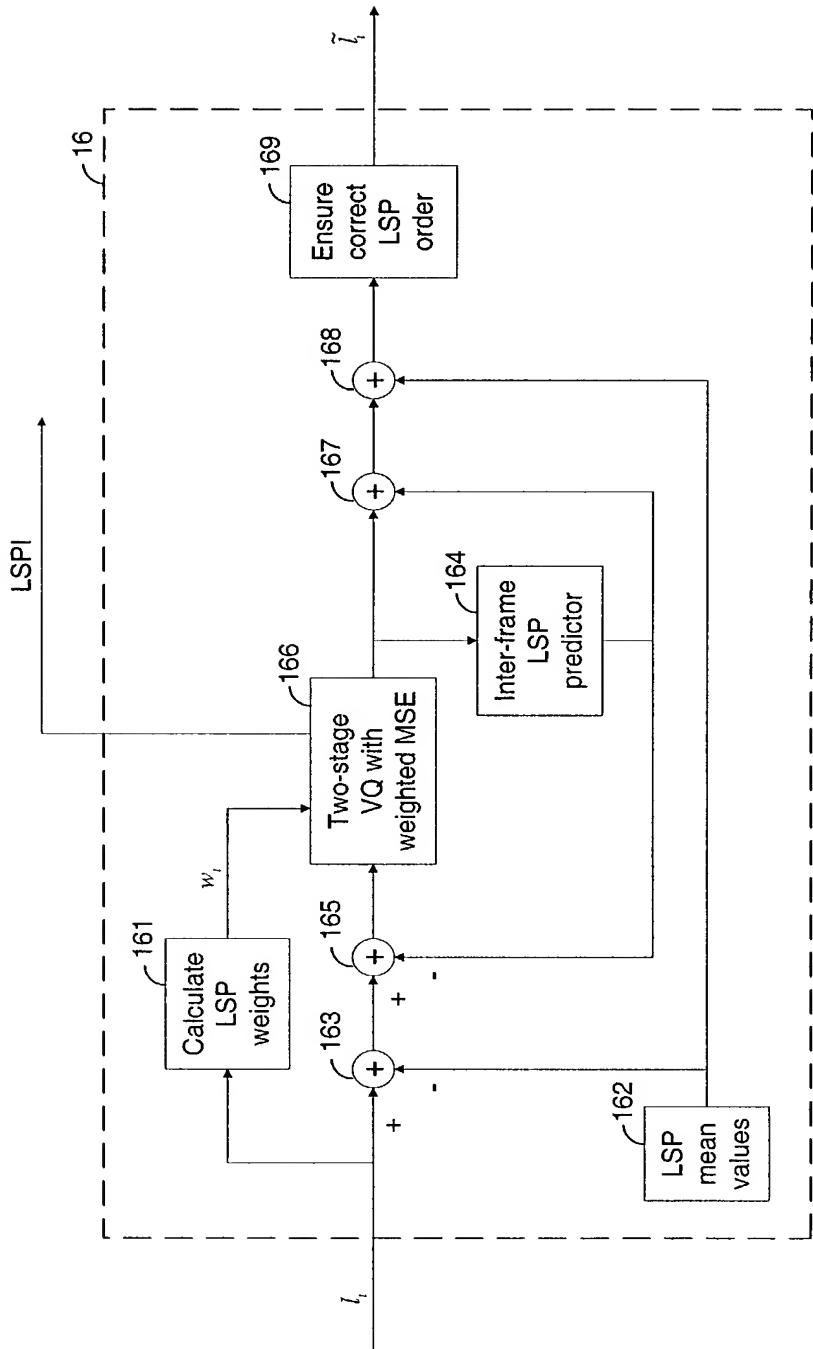


Figure 10 LSP quantizer (block 16)

0202-04.vsd/13

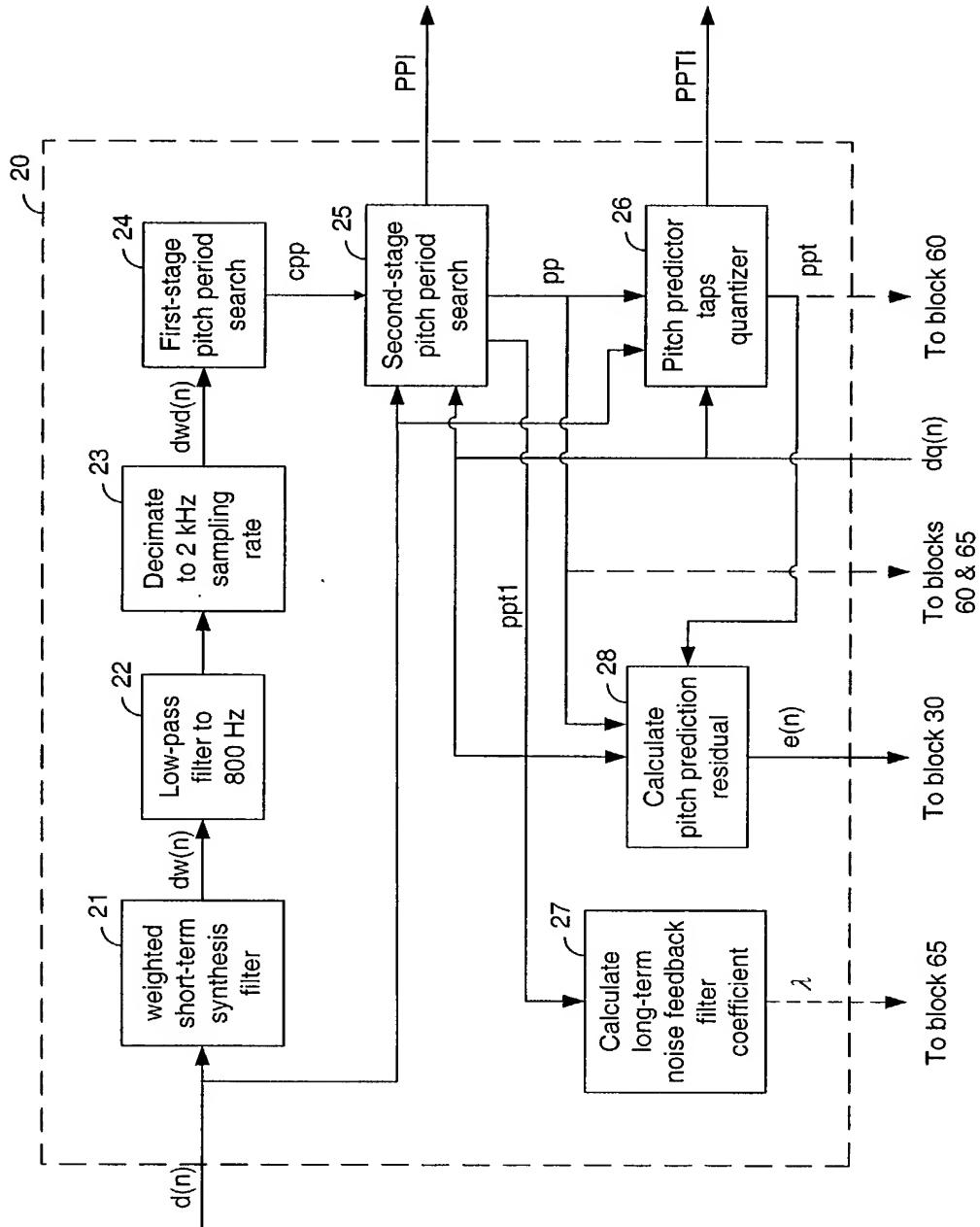


Figure 11 Long-term predictive analysis and quantization (block 20)

0202-04.vsd/14

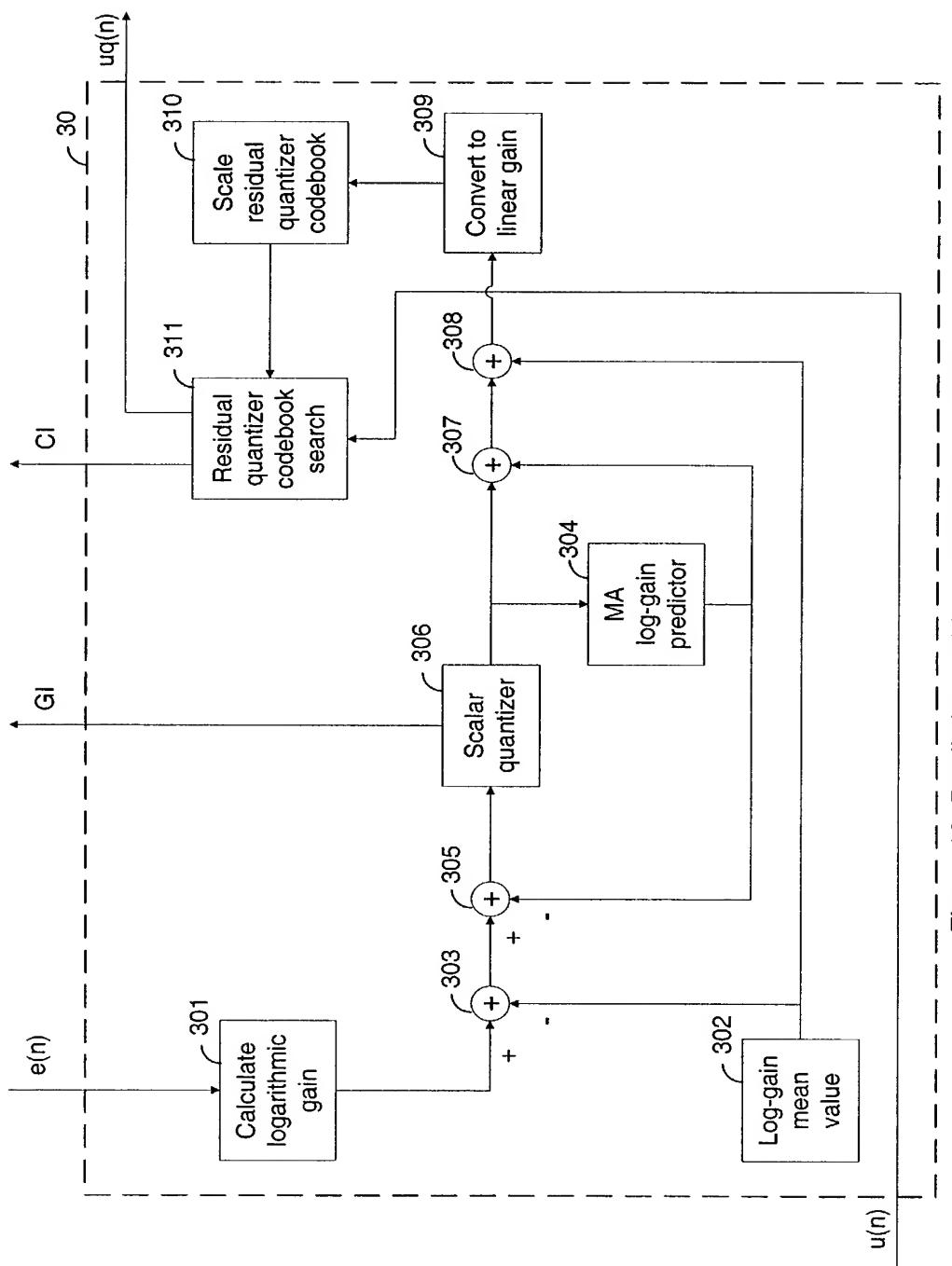


Figure 12 Prediction residual quantizer (block 30)

0202-04.vsd/15

13

0202-04 vsd/16

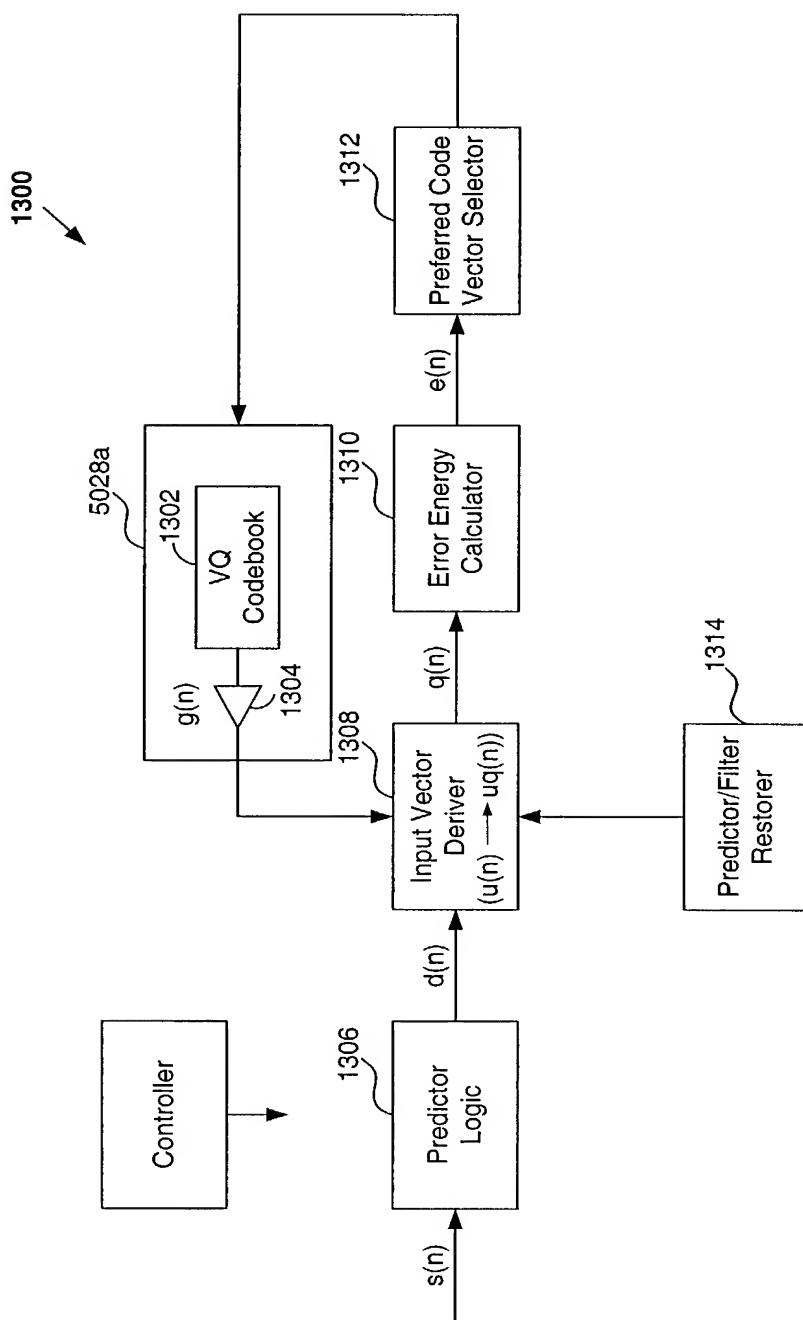


FIG. 13A

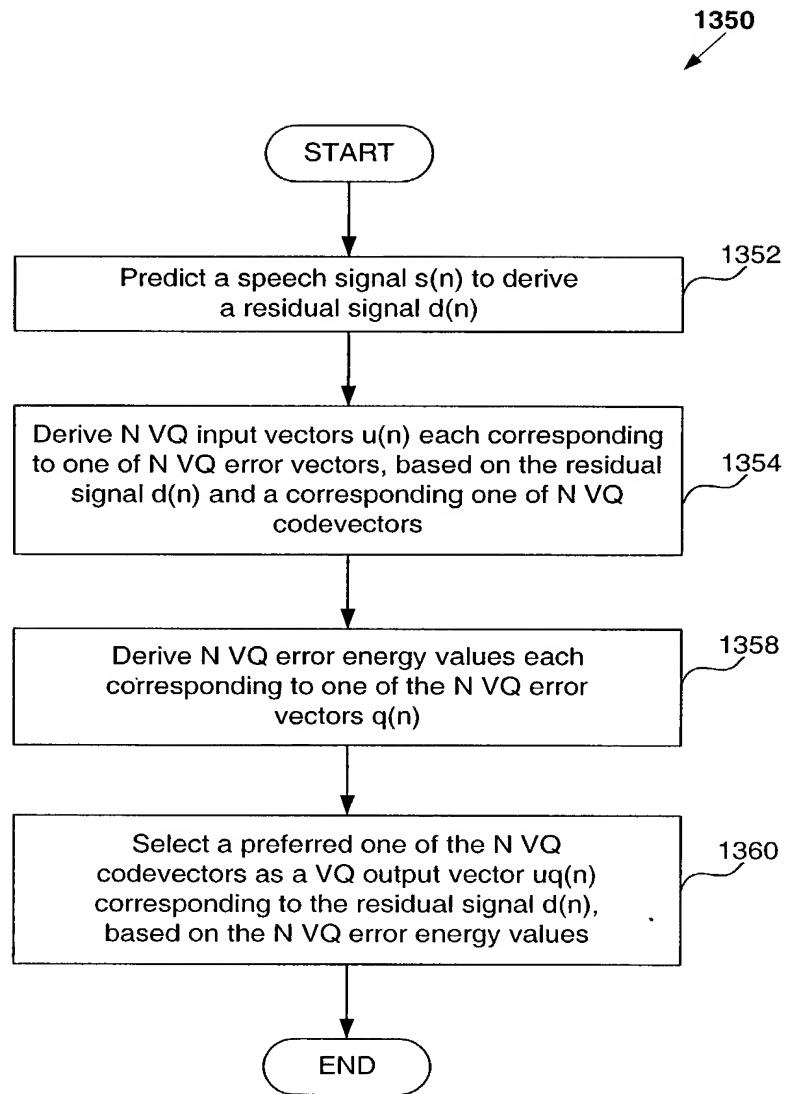
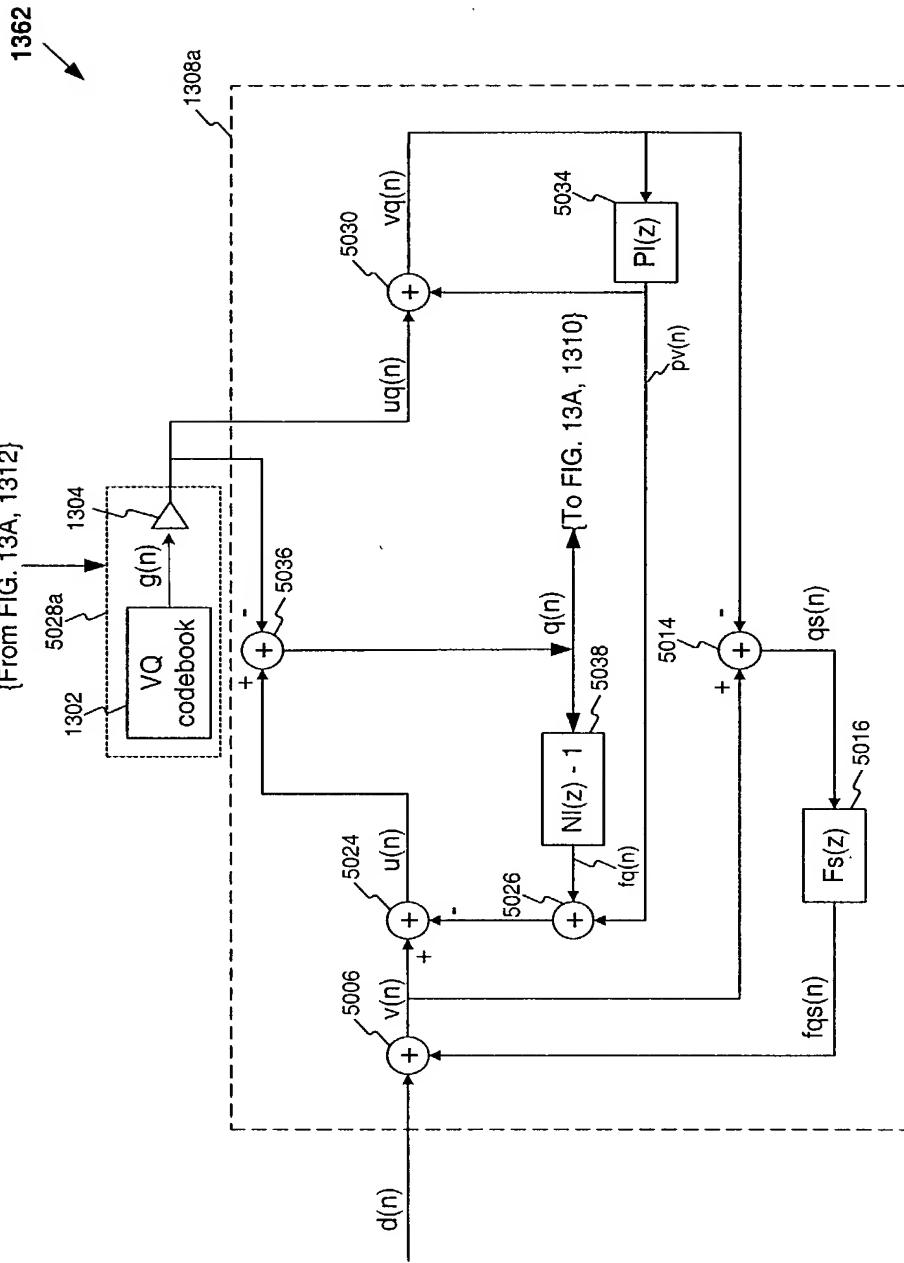


FIG. 13B

0202-04 vsd/17

{From FIG. 13A, 1312}



The portion of the codec structure that is used in prediction residual VQ codebook search
of the two-stage noise feedback codec of Fig. 5.

FIG. 13C

0202-04 vsd/18

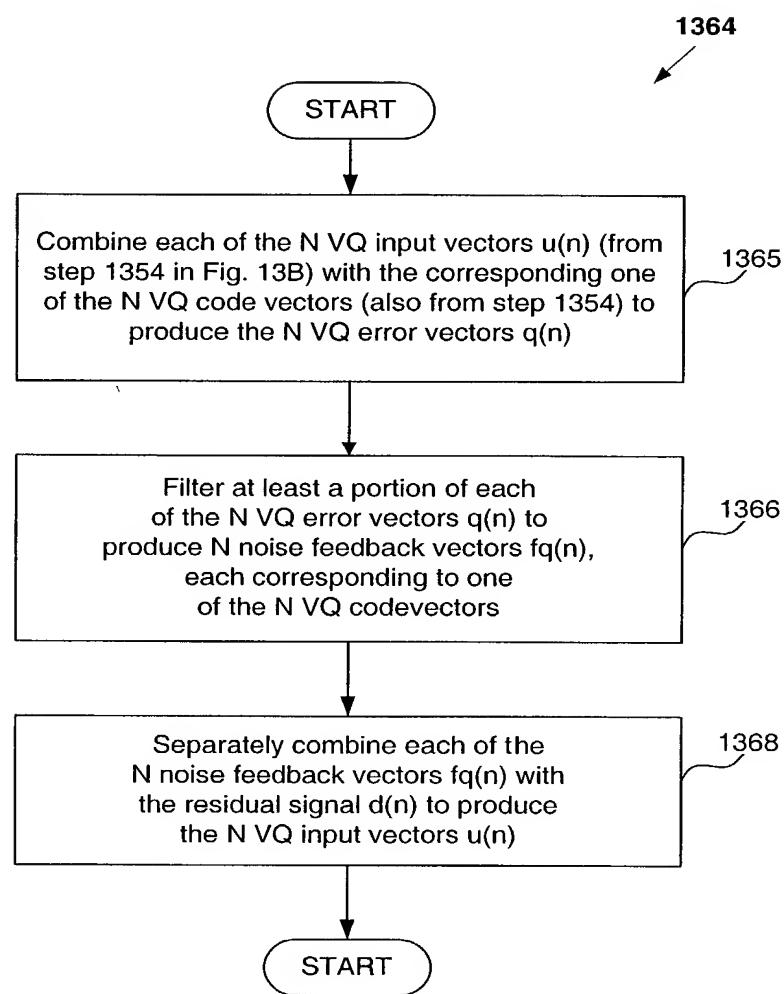


FIG. 13D

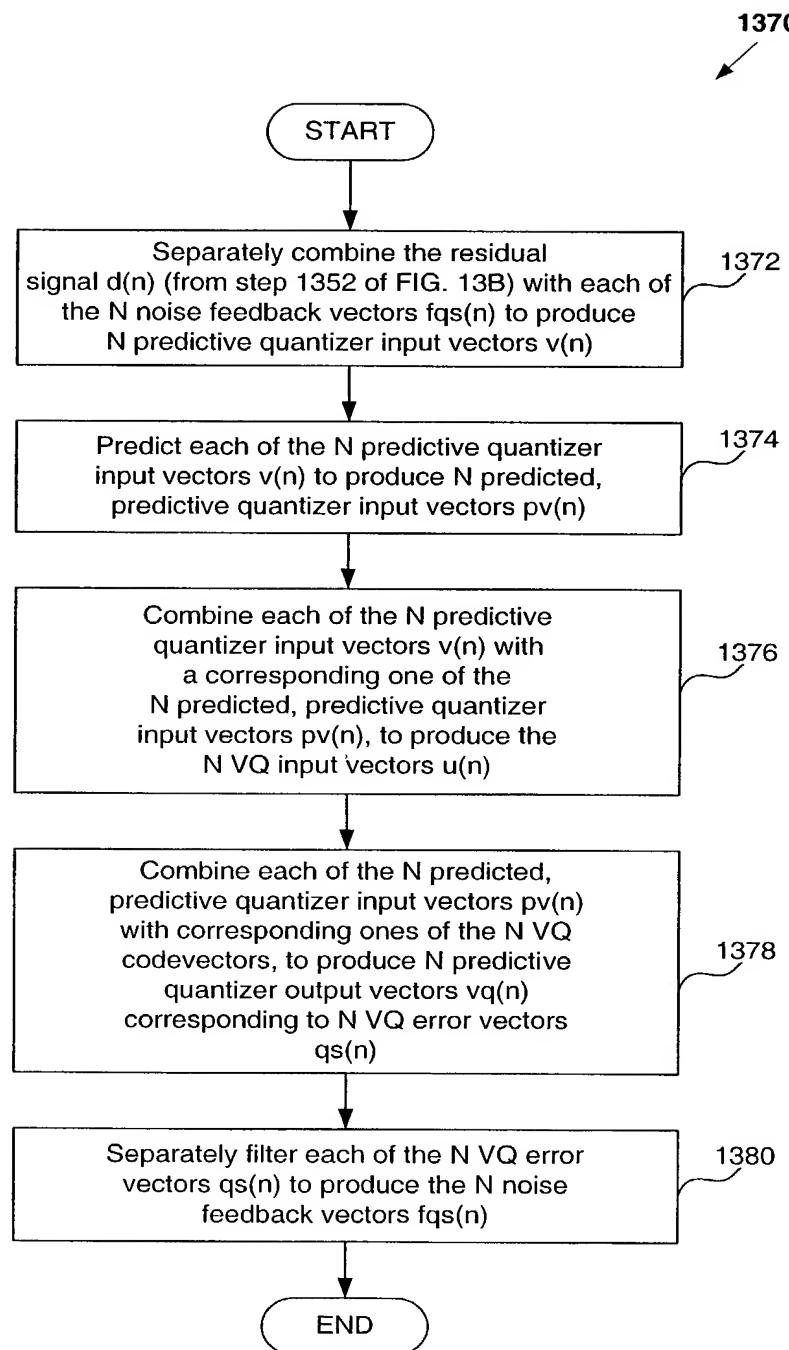


FIG. 13E

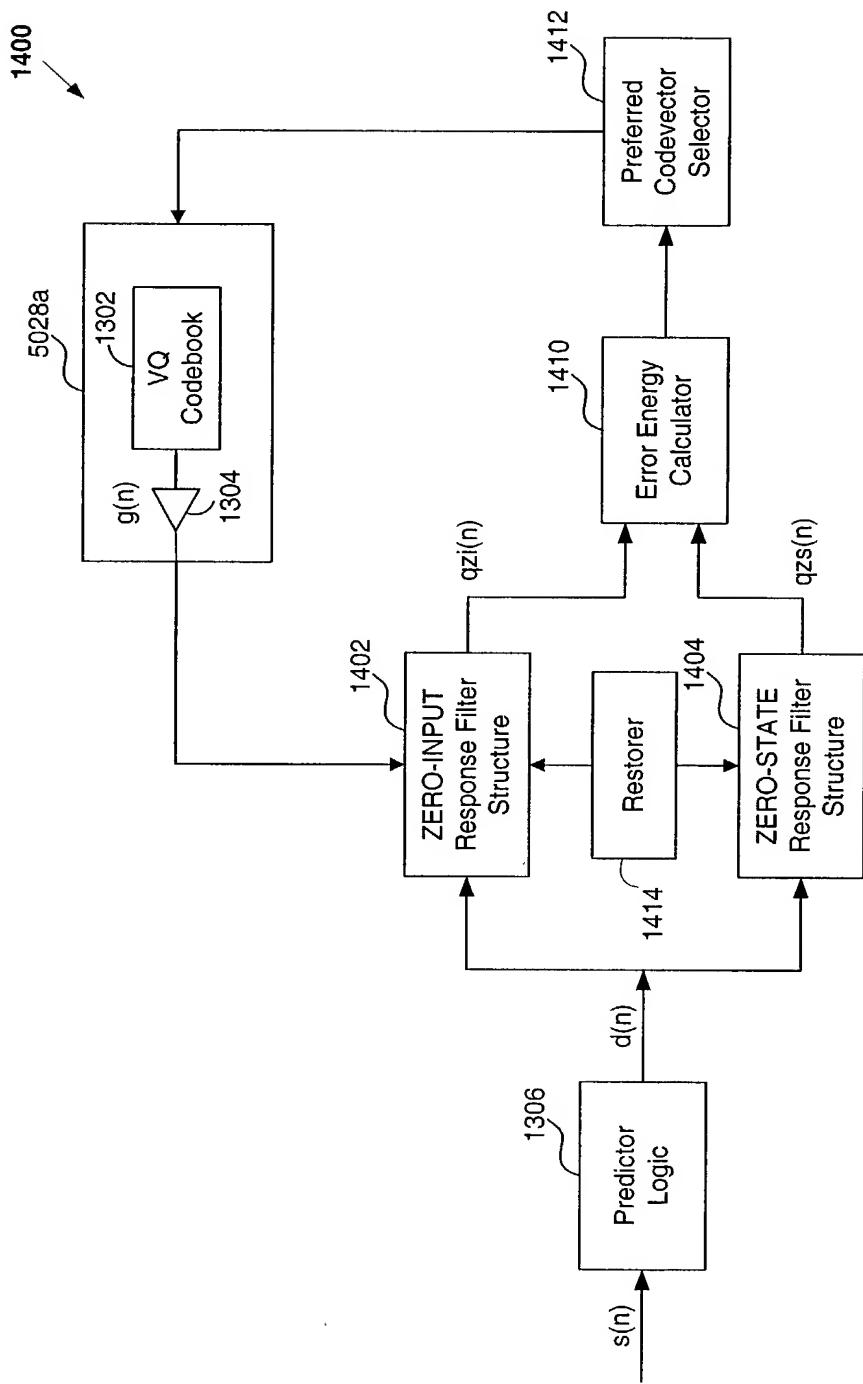


FIG. 14A

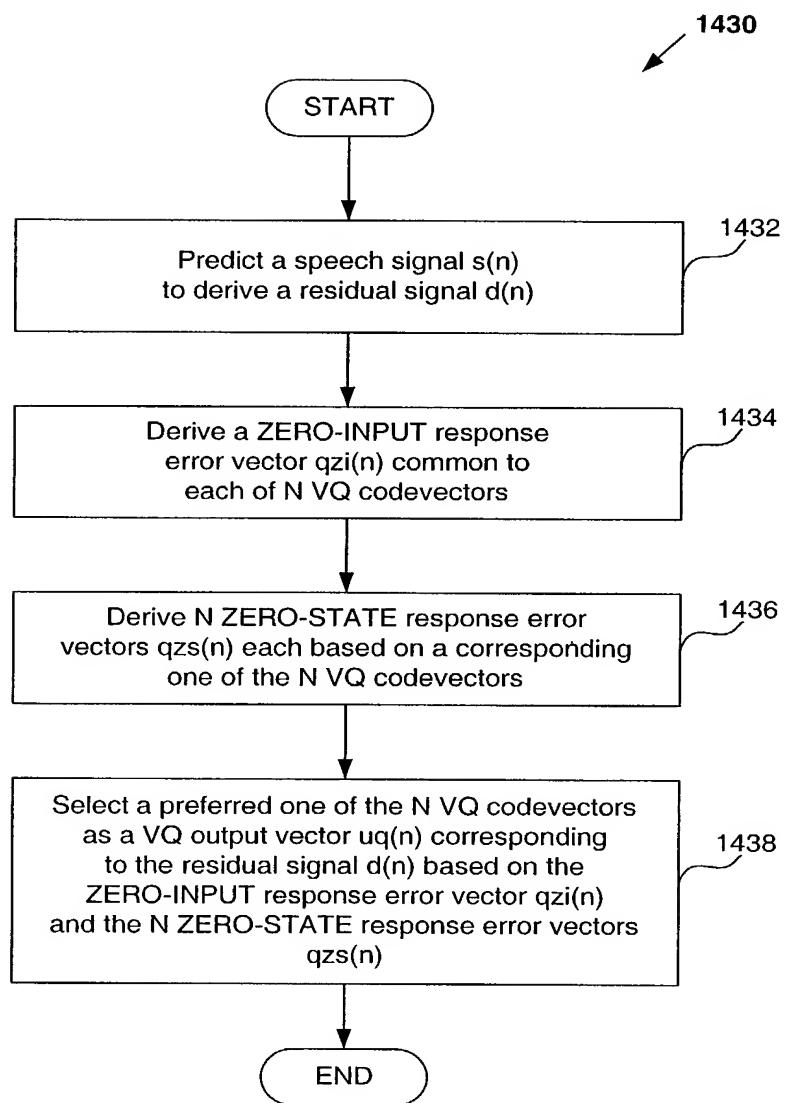
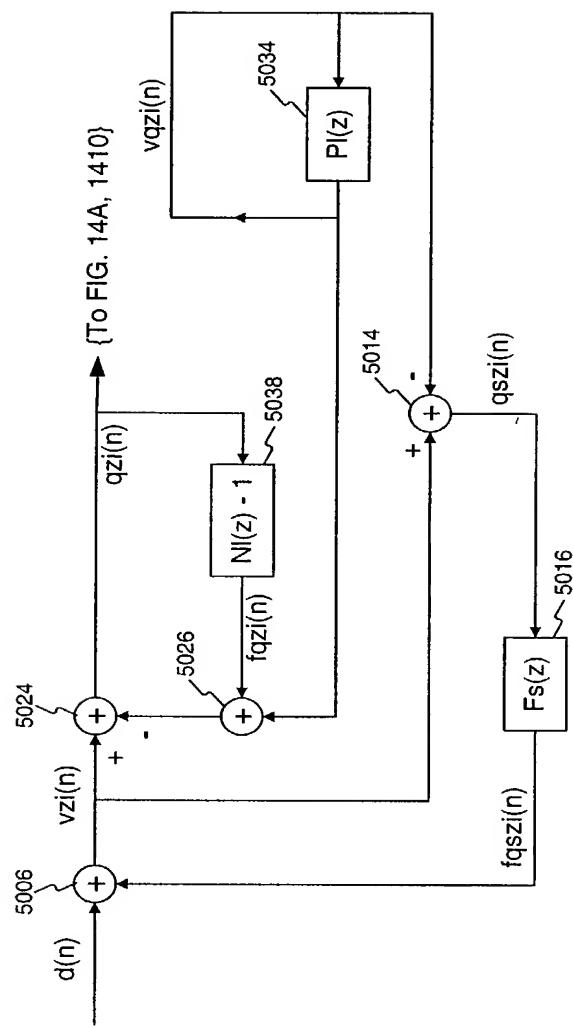


FIG. 14B

1402a



Filter structure during the calculation of the zero-input response of $q(n)$ of Fig. 13C.

FIG. 14C

0202-04.vsd/23

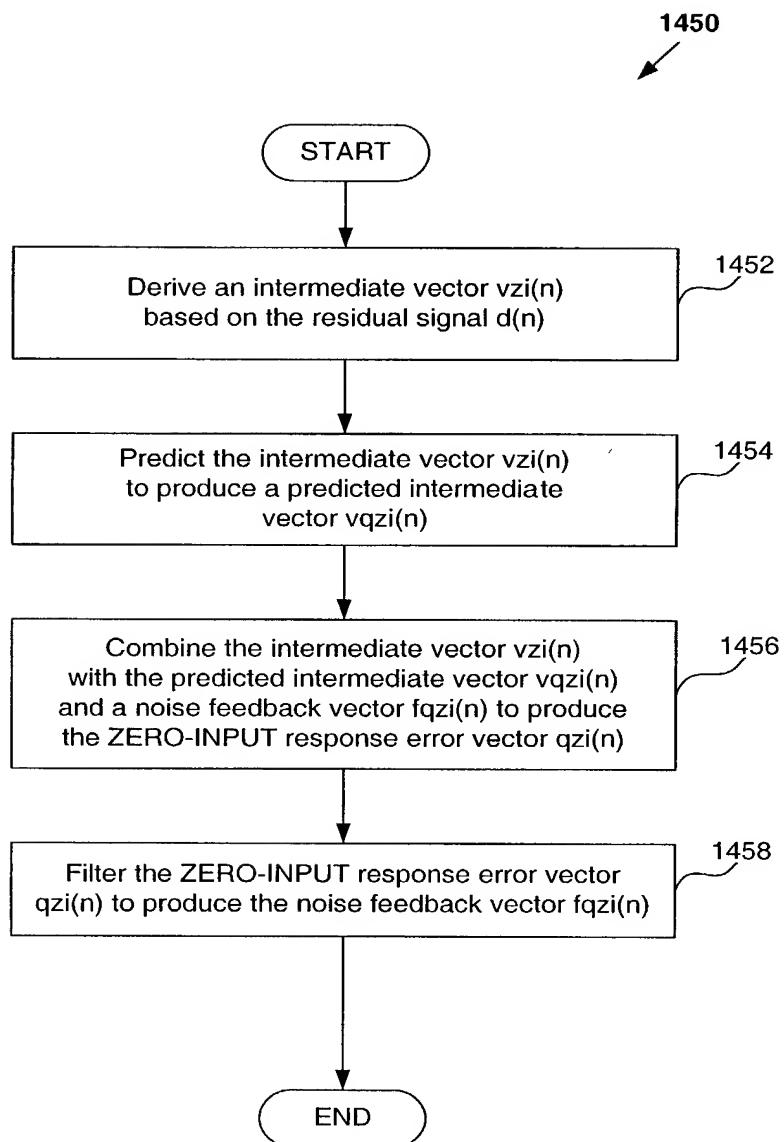


FIG. 14D

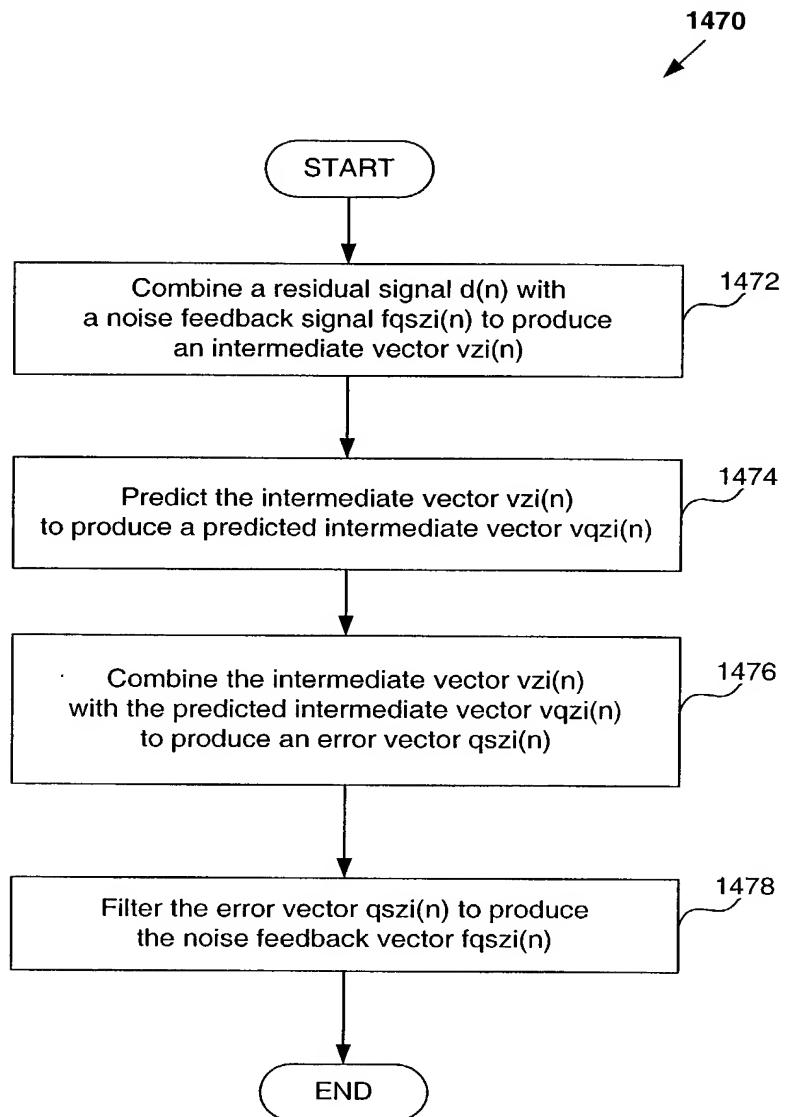
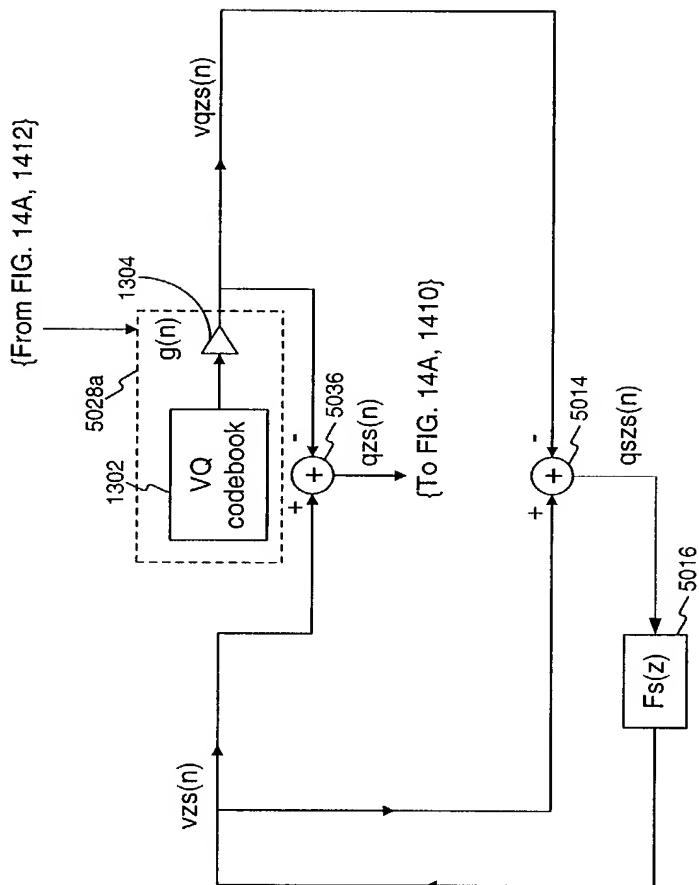


FIG. 14E

1404a



Filter structure during the calculation of the zero-state response of $q(n)$ in Fig. 13C.

FIG. 15A

0202-04.vsd/26

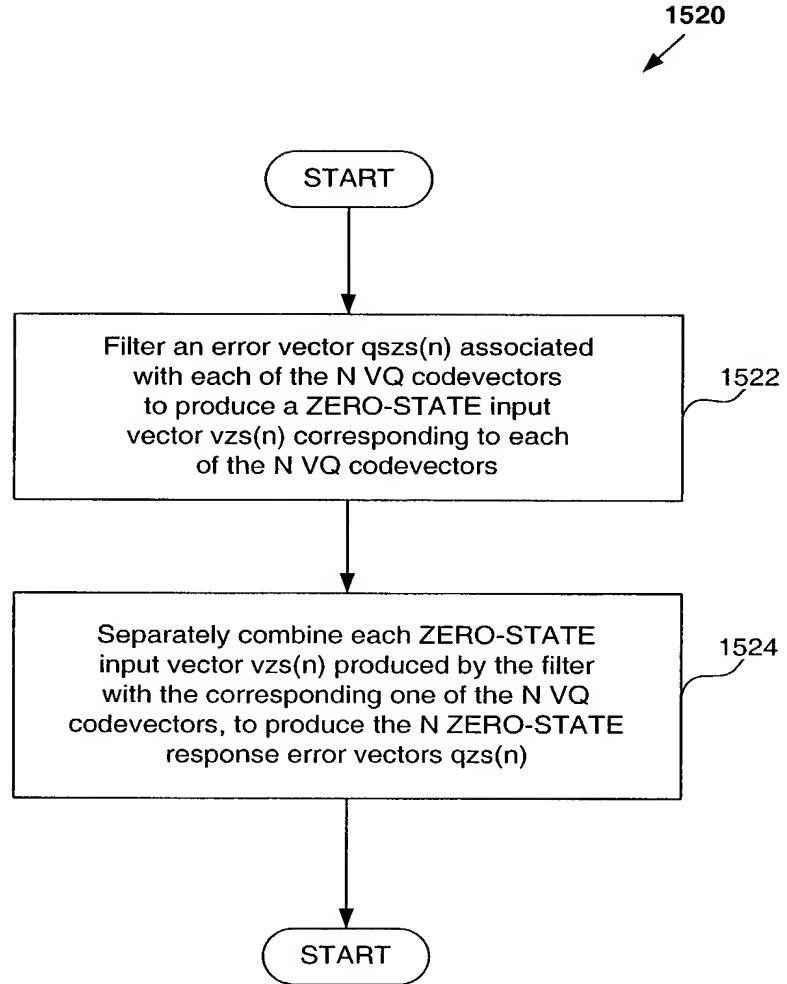
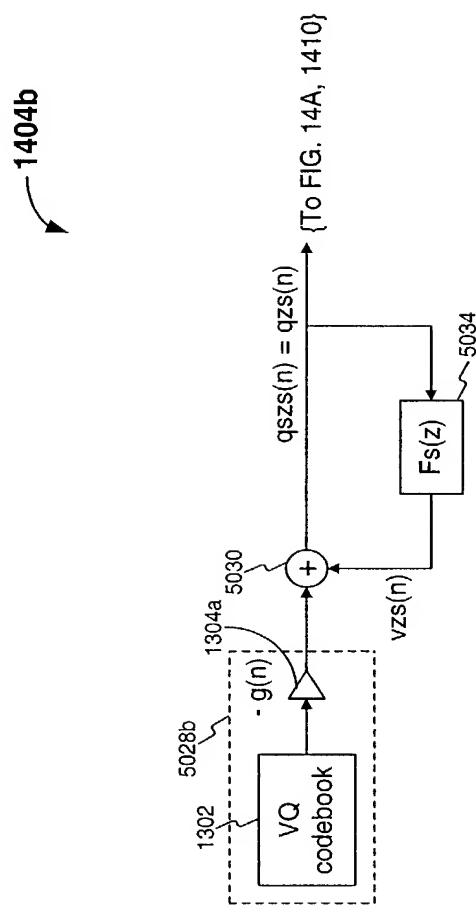


FIG. 15B



A filter structure equivalent to the structure in Fig. 15A.

FIG. 16A

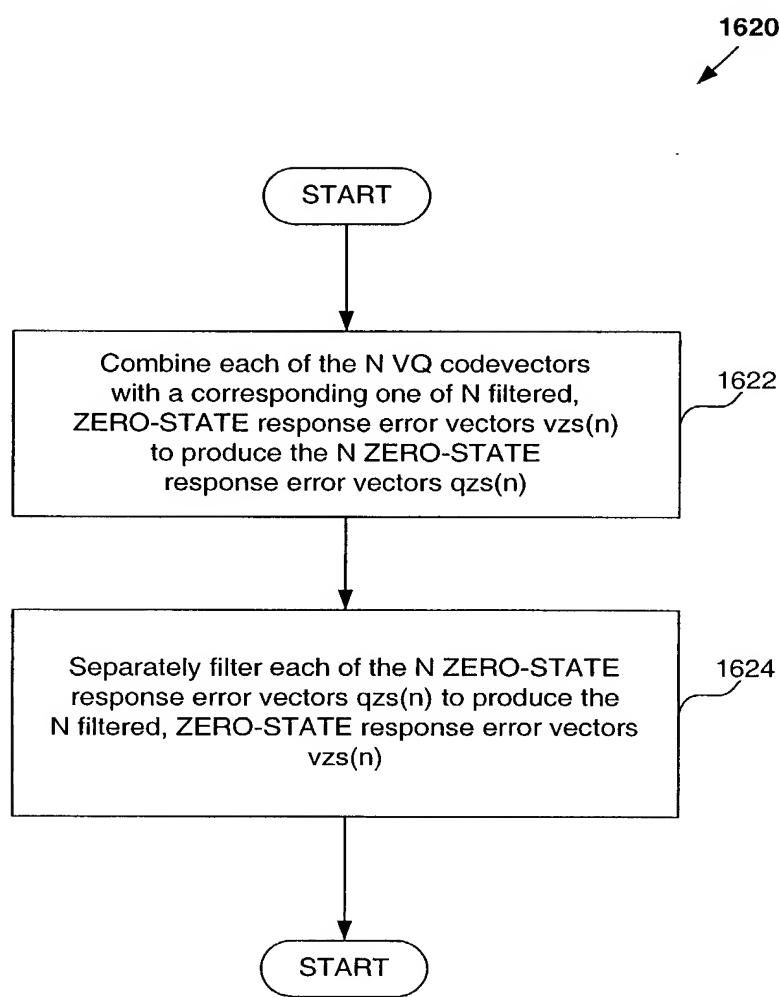


FIG. 16B

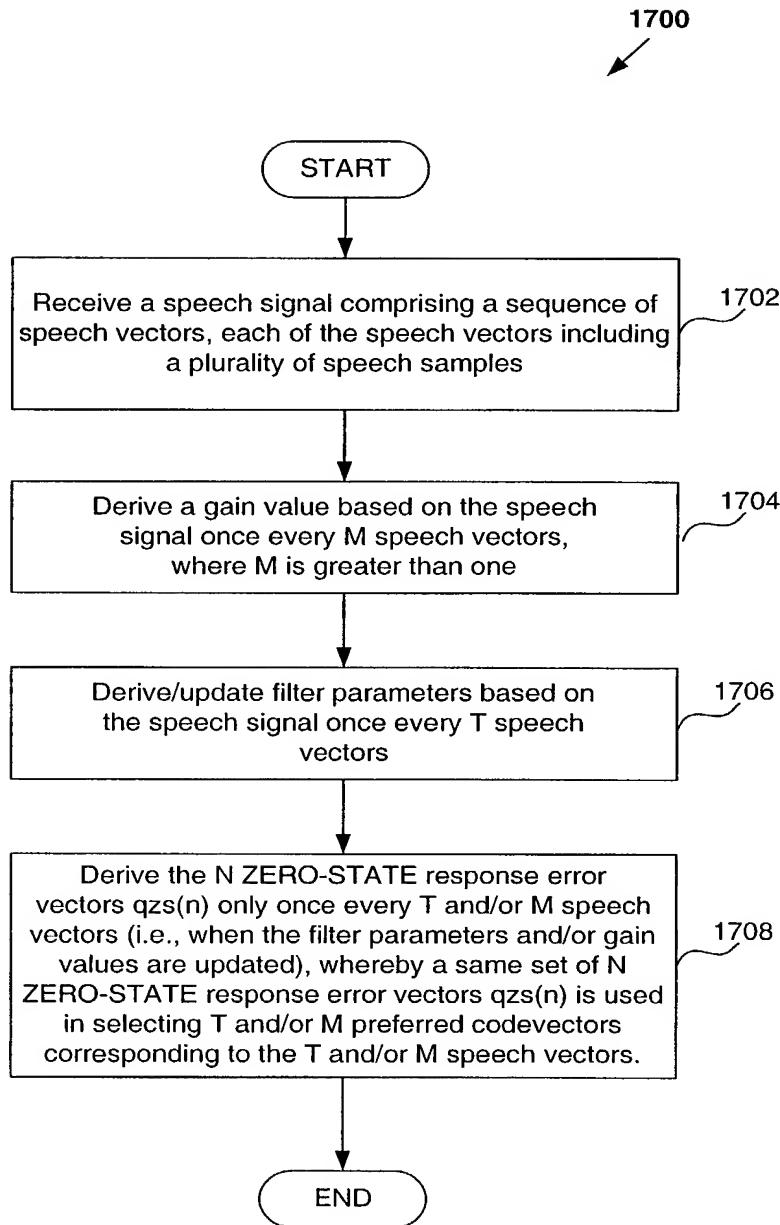


FIG. 17

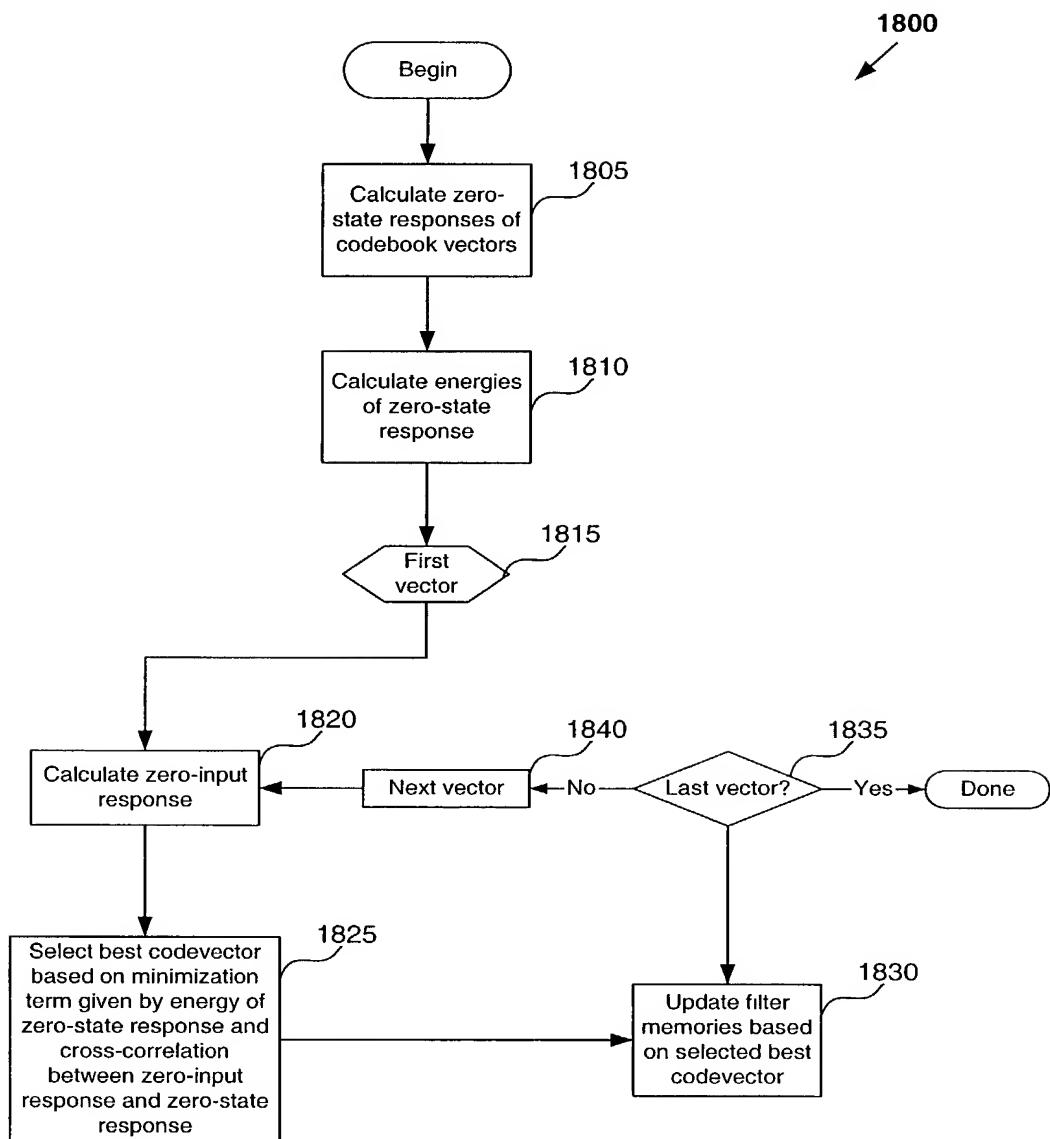


FIG. 18

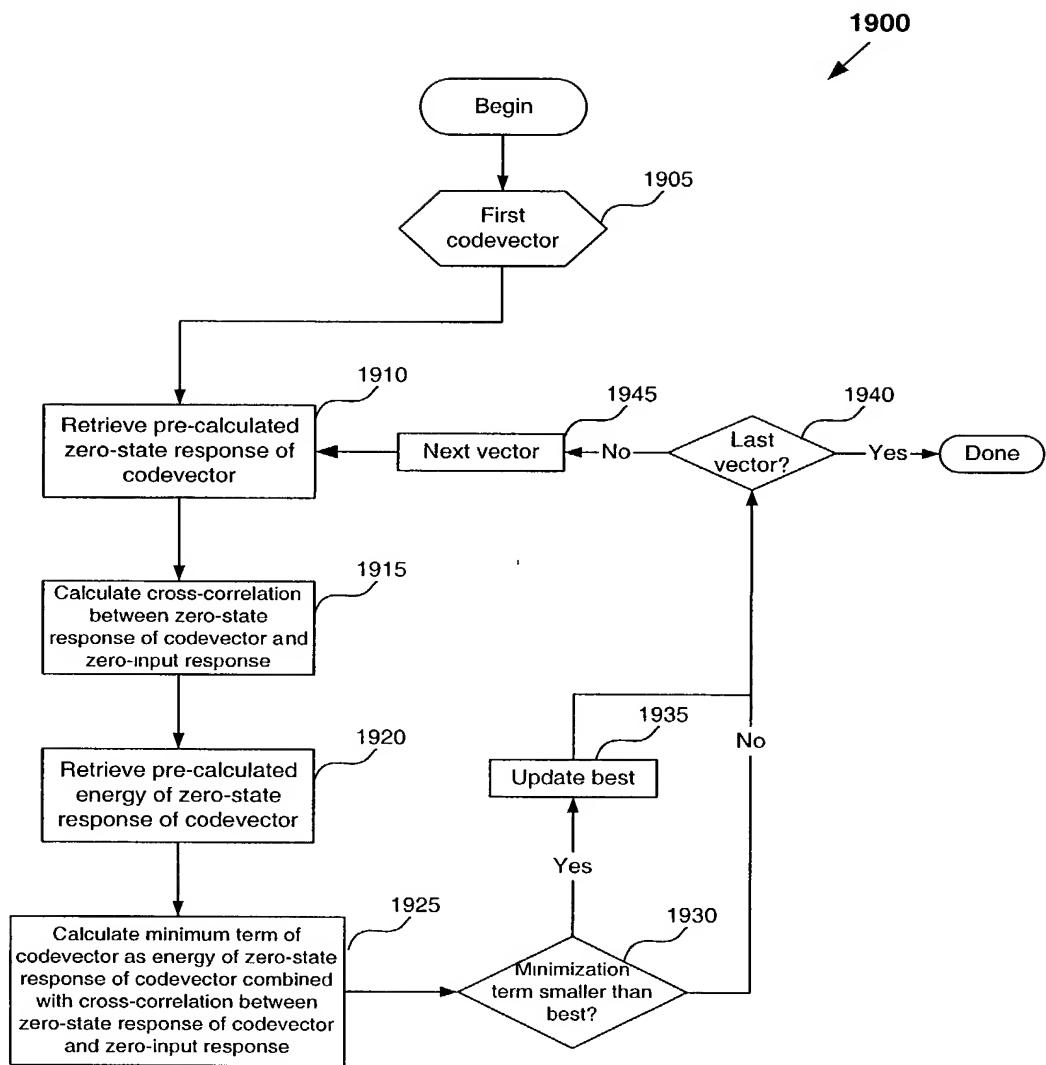


FIG. 19

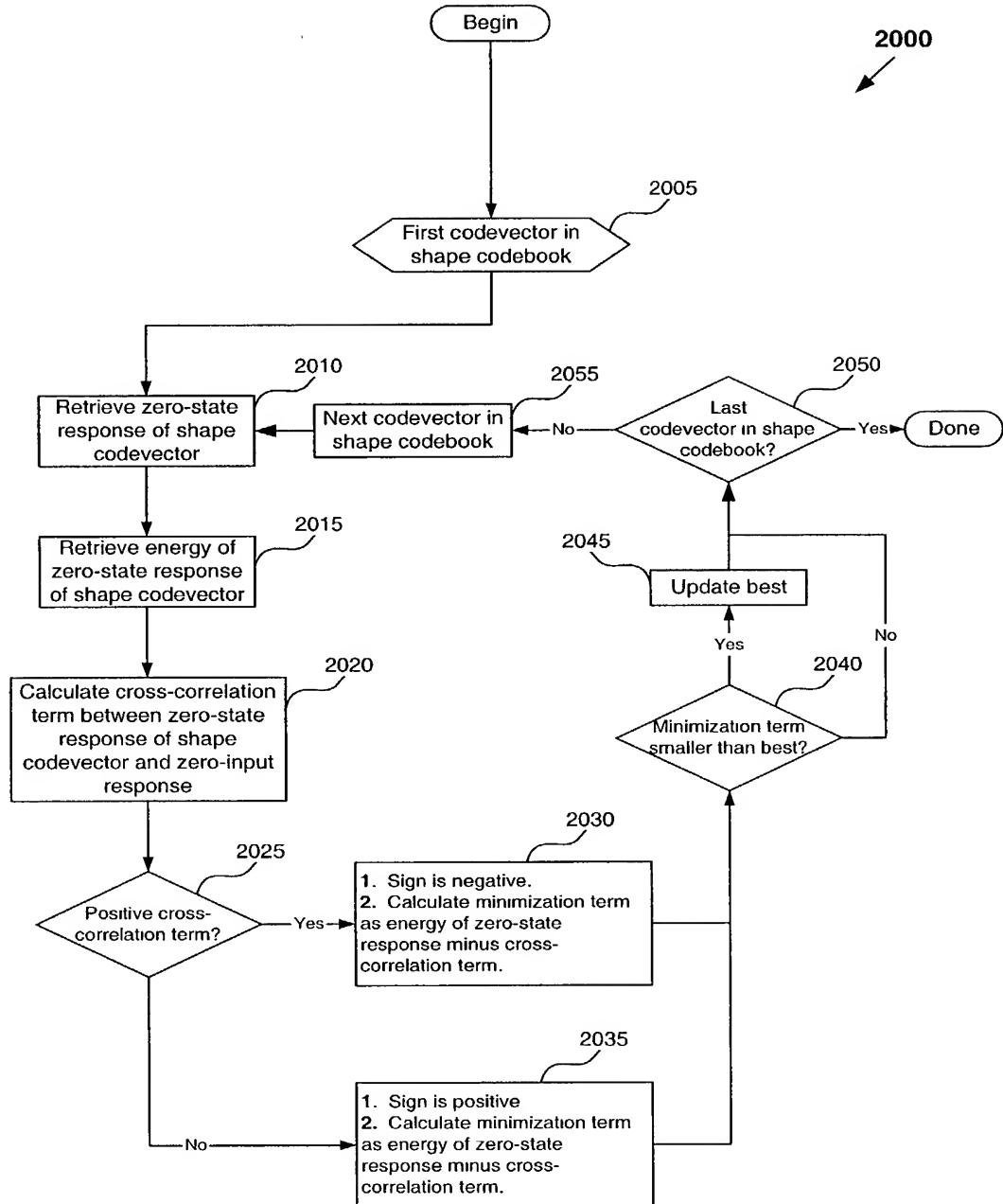


FIG. 20

0202-04.vsd/33

Computer System 2100

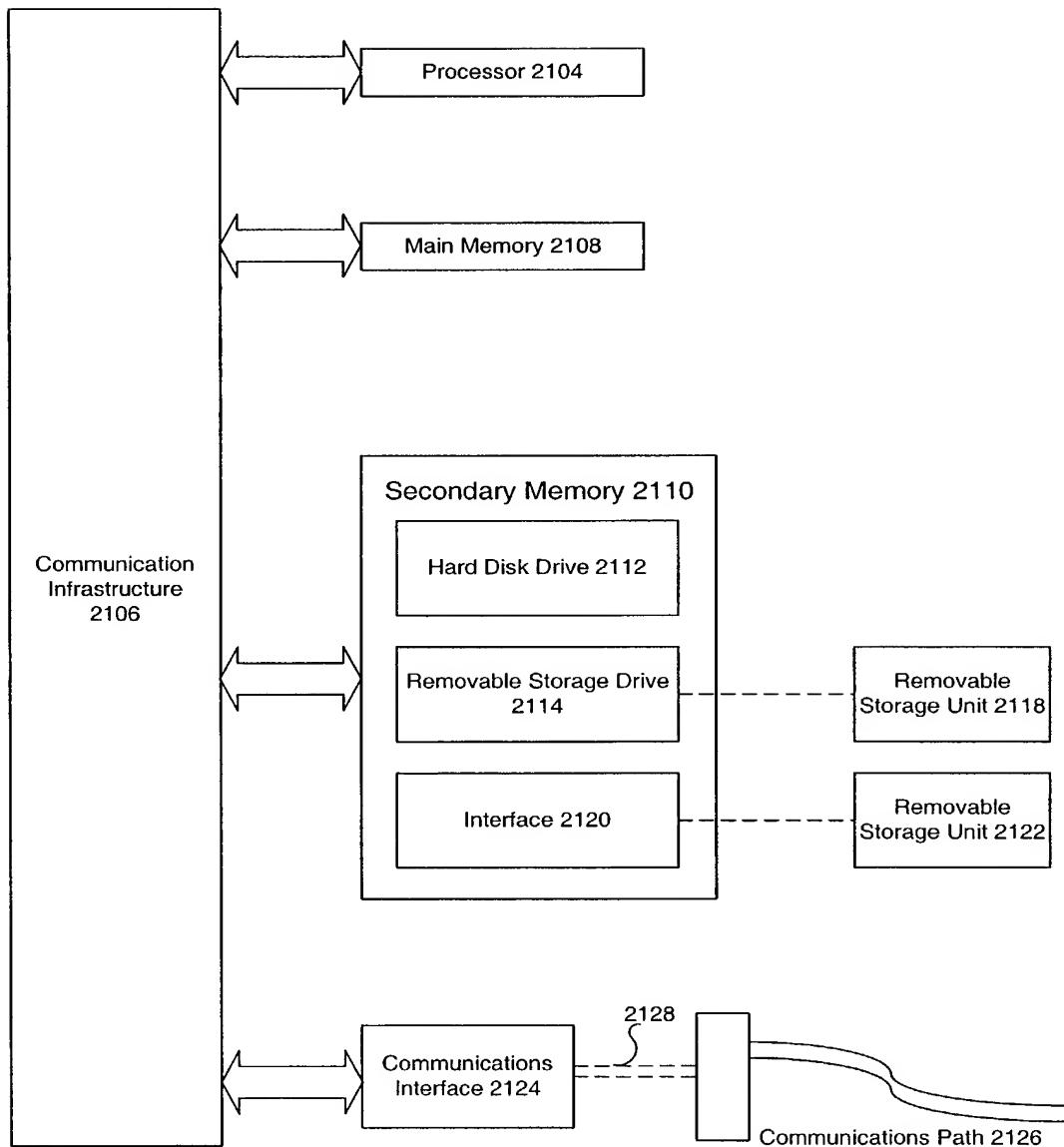


FIG. 21

0202-04 vsd/34